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UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF PUBLIC ROADS  
DIVISION OF AGRICULTURAL ENGINEERING

S. H. McCrory, Chief.

MONTHLY NEWS LETTER

WASHINGTON, D.C., May 20, 1927.

IT IS THE DESIRE OF THE BUREAU TO PAY PROMPTLY ALL ACCOUNTS, COVERING SUPPLIES AND MATERIALS PROCURED UNDER PURCHASE ORDERS, ISSUED BY THE WASHINGTON OFFICE. IN SOME INSTANCES DISCOUNTS ARE LOST, DUE TO DELAY IN PAYMENT. IT IS THEREFORE REQUESTED THAT ALL OUTSTANDING ACCOUNTS BE CHECKED, AND IF DELIVERY HAS BEEN MADE, WHICH HAS NOT BEEN ACKNOWLEDGED, RECEIPTS SHOULD BE FORWARDED IMMEDIATELY. PROMPT COMPLIANCE WILL GREATLY AID THE PURCHASING AND ACCOUNTING SECTIONS TO CLEAR AS MANY OUTSTANDING ORDERS AS POSSIBLE.

THE SOLICITOR HAS RECENTLY RULED THAT THE USE OF PENALTY ENVELOPES FOR TRANSMITTAL TO THE DEPARTMENT OF VOUCHERS EXECUTED BY MERCHANTS, CONTRACTORS OR OTHER PUBLIC CREDITORS IS NOT LEGALLY PERMISSIBLE SINCE SUCH MATTER DOES NOT RELATE EXCLUSIVELY TO THE BUSINESS OF THE UNITED STATES.

WE ARE RECEIVING FORM 5 VOUCHERS COVERING EMERGENCY FIELD PURCHASES, WITHOUT A COVERING REQUISITION IN QUADRUPLICATE. PROPERTY REGULATIONS No. 4, SENT YOU SOME TIME AGO, PROVIDE THAT REQUISITIONS MUST BE MADE FOR ALL SUPPLIES AND EQUIPMENT NEEDED. WHERE THE NEED IS URGENT, FIELD PURCHASES CAN BE MADE WITHOUT FURTHER AUTHORITY, BUT IN SUCH CASES REQUISITION FORM PROPERLY FILLED OUT AND ENDORSED "EMERGENCY PURCHASE," MUST BE SUBMITTED WITH THE VOUCHER.

IN SUBMITTING FORM 1038 "APPLICATION FOR ADVANCE OF FUNDS" THE DISBURSING OFFICE REQUESTS THAT THIS CARD BE NOT FOLDED AS IT IS THEIR PRACTICE TO FILE THE CARDS BY A METHOD THAT MAKES FOLDING UNDESIREABLE.





RECENTLY WE RECEIVED TWO PACKAGES OF FILMS FOR DEVELOPING, WITH NO INDICATION OF WHERE THEY CAME FROM. SUCH PACKAGES SHOULD ALWAYS INDICATE THE SENDER PLAINLY.

MR. McCrory LEFT WASHINGTON MAY 18, FOR THE PURPOSE OF MAKING AN INSPECTION OF THE CORN BORER CONTROL WORK, ACCOMPANIED BY J. T. BOWEN WHO WILL GIVE SPECIAL ATTENTION TO THE STUBBLE-BURNING EQUIPMENT THAT IS BEING USED IN THIS CONNECTION. R. B. GRAY IS STILL ACTING AS ASSISTANT ENGINEER IN THE CORN BORER CONTROL WORK WITH HEADQUARTERS AT TOLEDO, OHIO.

THE HYDRAULIC RESEARCH INVESTIGATION ON THE OBSTRUCTION CAUSED BY BRIDGE PIERS IN STREAMS IS BEING CONDUCTED BY D. L. YARNELL OF THIS BUREAU IN COOPERATION WITH THE STATE UNIVERSITY OF IOWA AT THE UNIVERSITY HYDRAULIC LABORATORY. THE INVESTIGATION IS FOR THE PURPOSE OF DETERMINING:

1. THE OBSTRUCTION CAUSED BY BRIDGE PIERS IN STREAMS.
2. THE EROSION ACTION AROUND THE BASE OF A PIER AND THE BEST METHODS OF PROTECTING THE BASE OF THE PIER FROM SUCH ACTION.
3. THE SHAPE OF PIER CAUSING THE LEAST OBSTRUCTION TO THE FLOW OF WATER AND THE SMALLEST AMOUNT OF EROSION AT THE BASE.

THE TYPES OF PIERS TO BE TESTED ARE THE SQUARE NOSE PIER, THE ROUND NOSE PIER AND THE STANDARD TYPES OF PIERS USED BY THE BUREAU OF PUBLIC ROADS. THESE INVESTIGATIONS WILL BE CONDUCTED ON LARGER SCALE MODELS THAN USED IN ANY PREVIOUS INVESTIGATIONS. THE RESULTS WILL BE USED TO CHECK THE PRESENT BRIDGE PIER FORMULAS AND NEW FORMULAS MAY BE DEVELOPED IF NECESSARY. THE MODELS WILL BE MOUNTED IN THE LARGE RIVER LABORATORY CANAL WHICH IS 130 FEET LONG, 10 FEET WIDE AND 10 FEET DEEP. A WOODEN FLOOR WILL BE INSTALLED IN THE CANAL WITH A REMOVABLE SECTION AROUND THE PIER BASE. MATERIAL WILL BE PLACED AROUND THE PIER FOR THE EROSION STUDIES. THE INVESTIGATION, HOWEVER, WILL BE CONFINED PRINCIPALLY TO ITEMS 1 AND 3 ALTHOUGH SOME STUDIES WILL BE MADE ON EROSION. IT IS PROPOSED TO MAKE VELOCITY TRAVERSES AROUND AND BETWEEN THE BRIDGE PIERS SO THAT THE VELOCITY DISTRIBUTION WILL BE KNOWN. DIRECTION INDICATORS WILL BE USED TO DETERMINE THE DIRECTION OF THE CURRENT AT ALL POINTS AROUND AND BETWEEN THE PIERS. DURING ALL TESTS THE FLOW WILL BE KEPT CONSTANT, THE QUANTITY BEING MEASURED BY A WEIR. TESTS WILL BE MADE FIRST WITH UNIFORM VELOCITY DISTRIBUTION AND THEN WITH UNEQUAL VELOCITY DISTRIBUTION IN THE APPROACH CHANNEL. TESTS WILL ALSO BE MADE WITH THE PIERS TURNED AT VARIOUS ANGLES WITH THE CURRENT. THE LABORATORY IS NOW BEING MADE READY FOR THE PIER TESTS.







ON A RECENT TRIP TO SOUTHERN CALIFORNIA, FRED C. SCOBEEY MADE ARRANGEMENTS FOR FURTHER EXPERIMENTS UPON THE CAPACITY OF REASONABLY LARGE CONCRETE PIPE MADE BY THE CENTRIFUGAL PROCESS. THE CITY OF RIVERSIDE, CALIFORNIA, IS INSTALLING A LINE 42 INCHES IN DIAMETER AND ABOUT 3 MILES LONG, OF PIPE CAST IN 8-FOOT LENGTHS. THE PROCESS INVOLVES THE RAPID SPINNING OF WET CONCRETE, IN A STEEL CYLINDER WHICH MAKES THE OUTSIDE FORM. A REINFORCING-WIRE CAGE HAS PREVIOUSLY BEEN PLACED IN THE CYLINDER. THERE IS NO INSIDE FORM, AND THE SHELL THICKNESS IS DETERMINED BY TWO RINGS FASTENED TO THE ENDS OF THE CYLINDER. THE WIRE CAGE APPEARS TO BE SELF-CENTERING. THE MIXTURE IS GIVEN A FIRST SPINNING, WHICH THROWS ALL THE EXCESS WATER OUT OF THE CONCRETE TO THE INNER SURFACE. THE ROLLS ARE THEN STOPPED AND THIS WATER IS SWEEPED OUT. AFTER A SECOND SPINNING THE UNIT IS RUN INTO A STEAM SHED AND QUICKLY CURED. THE CONCRETE RESULTING FROM THIS PROCESS IS EXTREMELY DENSE, WEIGHING SOME 165 POUNDS PER CUBIC FOOT AGAINST THE USUAL 145 TO 150 POUNDS, WITHOUT THE STEEL. THE FINISHED INTERIOR SURFACE IS VERY SATISFACTORY. NO BRUSH COAT IS NECESSARY. THERE REMAINS TO BE SEEN, HOWEVER, THE DEGREE OF SMOOTHNESS ATTAINED WHEN TWO UNITS ARE JOINED TOGETHER, WHICH CAN BE DETERMINED ONLY AFTER PART OF THE LINE IS LAID. THE BUILDERS OF THE LINE ARE COOPERATING TO THE EXTENT OF PROVIDING PIEZOMETER CONNECTIONS AT VARIOUS PLACES ON THE LINE AND VENTURI METER OR WEIR FOR THE MEASUREMENT OF THE FLOW. WHILE THIS IS BY NO MEANS THE FIRST LINE OF THIS TYPE IN THIS COUNTRY, IT IS, SO FAR AS WE ARE AWARE, THE LARGEST ONE TO DATE. THE CITY OF FORT COLLINS, COLORADO, IS BUILDING A SMALLER CENTRIFUGALLY-CAST CONCRETE LINE FOR A NEW SUPPLY MAIN.

GEORGE R. BOYD HAS JUST COMPLETED AN EXTENSIVE TRIP FOR THE BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR, FOR THE PURPOSE OF MAKING EXAMINATIONS AND REPORTS ON LAND SETTLEMENT PROJECTS IN THE SOUTHERN STATES. HE WILL PREPARE A REPORT ON EACH PROJECT EXAMINED AND THESE WILL BE CONSIDERED BY THE COMMISSIONER OF THE BUREAU OF RECLAMATION IN DECIDING UPON THE FEASIBILITY OF THE VARIOUS PROJECTS.

J. G. SUTTON HAS BEEN TRANSFERRED TO QUINCY, ILLINOIS, ON THE PROJECT RELATING TO THE EFFICIENCIES OF VARIOUS KINDS OF POWER FOR DRAINAGE PUMPING. THIS PROJECT HAS BEEN CARRIED ON BY MR. SHAFER FOR THE PAST THREE YEARS.

RUN-OFF INVESTIGATIONS IN THE MISSISSIPPI VALLEY HAVE BEEN SERIOUSLY INTERFERED WITH DURING THE PAST MONTH BY THE HIGH STAGES OF THE MISSISSIPPI RIVER. THESE STAGES CAUSED BACK WATER CONDITIONS, RENDERING IT IMPRACTICABLE TO SECURE GAGINGS ALTHOUGH SOME HEAVY RAINS WERE RECORDED. CLEVELAND, MISSISSIPPI, THE HEADQUARTERS OF B. S. CLAYTON REMAINED ABOVE HIGH WATER AND HIS OFFICE WORK WAS NOT INTERFERED WITH. TALLULAH, LOUISIANA, THE HEADQUARTERS OF ELMER JOHNSON AND C. A. BENNETT, WAS FLOODED BUT AT LAST ACCOUNTS THE WATER HAD NOT ACTUALLY REACHED THE SITE OF THE DELTA LABORATORIES, WHICH ARE LOCATED ON SLIGHTLY HIGHER LAND THAN THE TOWN PROPER. PRECAUTIONS







HAD BEEN TAKEN BY MESSRS. JOHNSON AND BENNETT IN THE WAY OF ELEVATING EQUIPMENT ABOVE EXPECTED HIGH WATER. NO GREAT DAMAGE THEREFORE, IS ANTICIPATED, ALTHOUGH THEIR WORK WILL BE DELAYED SOMEWHAT. LAST REPORTS INDICATED THAT MR. BENNETT WAS IN CHARGE OF SANITARY ARRANGEMENTS IN A REFUGEE CAMP.

PYROTOL DEMAND HAS SLACKENED NOTICEABLY, OWING TO THE APPROACH OF THE FARMING SEASON. PYROTOL SHIPMENTS FOR THE MONTH OF APRIL WERE AS FOLLOWS: BARKSDALE, 1,367,450; DUPONT, 633,400; GIBBSTOWN, 136,350. PLANS ARE NOW BEING MADE FOR THE DISTRIBUTION OF PYROTOL FOR THE NEXT FISCAL YEAR, WHICH, SO FAR AS WE NOW KNOW, WILL BE THE LAST OF THE DISTRIBUTION OF EXPLOSIVES FOR LANDCLEARING. IT IS NOT CERTAIN THAT THE SUPPLY WILL BE SUFFICIENT TO LAST THROUGHOUT THE FISCAL YEAR 1928.

M.C. BETTS, AS A MEMBER OF SUBCOMMITTEE No. 9, OF THE COMMITTEE ON FARM FIRE PROTECTION OF THE NATIONAL FIRE PROTECTION ASSOCIATION, ATTENDED A MEETING IN CHICAGO MAY 9 AND 10 IN THE INTEREST OF FARM BUILDING FIRE PROTECTION.

THE SECOND LAND ECONOMICS CONFERENCE WAS HELD UNDER THE AUSPICES OF THE CALIFORNIA DEVELOPMENT ASSOCIATION AT LOS ANGELES APRIL 25 AND 26. A PAPER WAS PRESENTED BY W. W. McLAUGHLIN AND A DISCUSSION BY O.V.P. STOUT.

CARL ROHWER STATES THAT BEFORE STARTING EVAPORATION OBSERVATIONS THIS YEAR, A METAL COMBING WAS ADDED TO THE LARGE RESERVOIR AT FORT COLLINS, COLORADO, TO REDUCE THE SPLASHING OF WATER DURING HIGH WINDS. RESULTS SHOW THAT THE DEVICE IS EFFECTIVE FOR THIS PURPOSE.

A. L. FELLOWS ATTENDED THE NATIONAL DRAINAGE CONGRESS AT AMARILLO, TEXAS, LATE IN APRIL, AND DELIVERED AN ADDRESS. MR. FELLOWS ALSO VISITED POINTS IN ARIZONA.

W. W. McLAUGHLIN AND HARRY F. BLANEY HELD A CONFERENCE WITH CHIEF ENGINEER MULHOLLAND AND OTHER ENGINEERS OF THE LOS ANGELES CITY WATER DEPARTMENT RELATIVE TO COOPERATIVE DUTY OF WATER WORK IN SAN FERNANDO VALLEY.

ON MAY 12, A. H. SENNER DELIVERED AN ADDRESS BEFORE THE BALTIMORE SECTION OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS ON "AUTOMATIC HOUSE HEATING." THE MEETING WAS WELL ATTENDED, NOT ONLY BY THE MEMBERS OF THE SOCIETY BUT ALSO BY PERSONS ENGAGED IN THE OIL AND GAS HEATING INDUSTRIES. SOME NEW THOUGHTS ON COMBUSTION SPACE DESIGN, AS INDICATED BY RESEARCH DONE BY THE DIVISION, WERE BROUGHT OUT.

J. T. BOWEN DELIVERED A PAPER ON "RECENT DEVELOPMENTS IN REFRIGERATION AS APPLIED TO DAIRY PRODUCTS," AT THE ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF ICE AND REFRIGERATION, HELD IN WASHINGTON MAY 5 AND 6.

1. The first part of the report deals with the general situation of the country and the progress of the work done during the year. It is a summary of the work done by the various departments and is intended to give a general impression of the work done during the year.

2. The second part of the report deals with the work done by the various departments during the year. It is a summary of the work done by the various departments and is intended to give a general impression of the work done during the year.

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9. The ninth part of the report deals with the work done by the various departments during the year. It is a summary of the work done by the various departments and is intended to give a general impression of the work done during the year.

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